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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/792,246	03/03/2004	Yuh-Fong Hwang	252011-1950	3979	
	7590 12/22/2006 VDEN HOSTEMEVER	EXAMINER			
THOMAS, KAYDEN, HOSTEMEYER & RISLEY LLP 100 GALLERIA PARKWAY			CABRERA, ZOILA E		
SUITE 1750 ATLANTA, GA	A 30339		ART UNIT PAPER NUMBER		
			2125		
SHORTENED STATUTOR	Y PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MO	NTHS	12/22/2006	PAPER		

# Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)	-			
Office Action Summary			.,				
		10/792,246	HWANG ET AL.				
		Examiner	Art Unit				
	The MAIL INC DATE of this communication on	Zoila E. Cabrera	2125				
Period fo	The MAILING DATE of this communication ap or Reply	pears on the cover sneet with the c	correspondence ad	aress			
WHIC - Exter after - If NC - Failu Any	ORTENED STATUTORY PERIOD FOR REPL CHEVER IS LONGER, FROM THE MAILING D ISON SOLUTION OF THE MAILING D ISON (6) MONTHS from the mailing date of this communication. O period for reply is specified above, the maximum statutory period or to reply within the set or extended period for reply will, by statut reply received by the Office later than three months after the mailine and patent term adjustment. See 37 CFR 1.704(b).	OATE OF THIS COMMUNICATION 136(a). In no event, however, may a reply be tin will apply and will expire SIX (6) MONTHS from e, cause the application to become ABANDONE	N. nely filed the mailing date of this co D (35 U.S.C. § 133).	,			
Status		•					
1)🖂	Responsive to communication(s) filed on <u>06 S</u>	Santambar 2006					
2a)□							
<i>'</i> =	,—						
3)∐	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.						
	closed in accordance with the practice under	Ex parte Quayle, 1935 C.D. 11, 4:	53 O.G. 213.				
Dispositi	on of Claims						
4)⊠	4)⊠ Claim(s) <u>1-10 and 28-33</u> is/are pending in the application.						
	4a) Of the above claim(s) <u>11-27 and 34-38</u> is/are withdrawn from consideration.						
5)	Claim(s) is/are allowed.						
6) 🛛	⊠ Claim(s) <u>1-10 and 28-33</u> is/are rejected.						
7)	Claim(s) is/are objected to.						
′=	Claim(s) are subject to restriction and/o	or election requirement.					
	· · · — · ·	4					
	on Papers						
9)[_	The specification is objected to by the Examine	er.					
10)⊠ The drawing(s) filed on <u>03 March 2004</u> is/are: a)⊠ accepted or b)□ objected to by the Examiner.							
	Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
	Replacement drawing sheet(s) including the correct	ction is required if the drawing(s) is ob	jected to. See 37 CF	R 1.121(d).			
11)	The oath or declaration is objected to by the E	xaminer. Note the attached Office	Action or form PT	O-152.			
Priority ι	ınder 35 U.S.C. § 119						
12)	Acknowledgment is made of a claim for foreign	priority under 35 LLS C & 119(a)	\-(d\ or (f\				
_	12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of:						
a)ı		to have been received					
	<ol> <li>Certified copies of the priority documents have been received.</li> <li>Certified copies of the priority documents have been received in Application No</li> </ol>						
•				04			
	3. Copies of the certified copies of the price		ed in this National	Stage			
+ 6	application from the International Burea	` ''					
* 5	See the attached detailed Office action for a list	t of the certified copies not receive	ed.				
		•	•				
Attachmen	t(s)						
_	e of References Cited (PTO-892)	4) Interview Summary	(PTO-413)				
2) 🔲 Notic	e of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Da	ate				
3) Information Disclosure Statement(s) (PTO/SB/08)  5) Notice of Informal Patent Application							
Paper No(s)/Mail Date 6)  Other:							

#### **DETAILED ACTION**

### Election/Restrictions

1. Applicant's election with traverse of Group I, Claims 1-10 and 28-33, in the reply filed on October 5, 2006 is acknowledged. The traversal is on the ground(s) that the application can be searched without undue burden on the examiner. This is not found persuasive because the inventions are independent or distinct and different classification as provided in the office action of September 6, 2006 is needed. Therefore, there is a burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

## Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9 and 28-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Sandstrom et al. (US 6,883,158 B1).

### Sandstrom discloses

1. A method of fabricating a mask, comprising: providing material and device data (Figs. 5-6, i.e. Pattern data, Blank data, pattern design 503 and mask blank 504);

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defining a first manufacturing model according to the material and the device data (Fig. 12, Model); performing a first process run of a first mask as defined by the first manufacturing model (Fig. 5, process); collecting a first process data during the first process run (Col. 6, lines 6-19); determining a backward modification data according to the material and the device data, and the first process data (Fig. 5, feed back loop; Col. 4, lines 35-67); modifying the first manufacturing model according to the backward modification data to obtain a second manufacturing model (Fig. 5, feedback loop 510 and error reduction system 506, error reduction model 1203); and performing a second process run of a second mask as defined by the second manufacturing model (Fig. 5, process; Fig. 11, production of second mask; Col. 17, lines 1-6).

- 2. The method of claim 1, wherein the backward modification data determining step further comprises performing statistical process control analysis (Col. 4, lines 66-67; Fig. 12, element 1203).
- 3. The method of claim 1, wherein the material data comprises photoresist type, characteristics, production date, post coating decay, <u>or</u> batch relation data (Col. 5, lines 6-10).
- 4. The method of claim 1, wherein the device data comprises device type, mask layer, mask grade, option correction type, pattern loading <u>or</u> device loading data (Col. 5, lines 6-10).

- 5. The method of claim 1, wherein the first process data comprises exposure tool, etching chamber, etching time, tooling bias, batch relation, <u>or</u> inspection result data (Figs. 7, 12).
- 6. The method of claim 1, wherein the manufacturing model defining step further comprises defining a manufacturing model that describes a writing process for masks (Fig. 12).
- 7. The method of claim 1, wherein the manufacturing model defining step further comprises defining a manufacturing model that describes a baking process for masks (Col. 23, lines 1-4).
- 8. The method of claim 1, wherein the manufacturing model defining step further comprises defining a manufacturing model that describes a developing process for masks (Col. 17, lines 1-11).
- 9. The method of claim 1, wherein the manufacturing model defining step further comprises defining a manufacturing model that describes an etching process for masks (Col. 6, lines 6-20).

## Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sandstrom et al. (US 6,883,158 B1)** in view of

As for claims 10 and 33 Sandstrom discloses acquiring an inspection result of a preceding process run, wherein the inspection result is an after-strip inspection result (Fig. 11); determining a forward modification data according to the first process data and the inspection result (Fig. 5, feed forward loop; Col. 7, lines 1-15); determining a reetch manufacturing model according to the forward modification data (Fig. 12, Model). Sandstrom discloses that by feed-forward or feedback correction or a combination of the two a large portion of the total errors can be controlled and corrected and with his invention development of better and better models to remove errors can be accomplished (Col. 7, lines 1-15). Sandstrom discloses that measurements are made after etching whereby systematic errors from these processes are taken care of in the compensation of deviations (Col. 17, lines 1-11). However, Sandstrom does not specifically disclose performing a re-etch process run of the first mask. But Todokoro discloses a re-etching procedure to ensure process integrity (Col. 14, lines 46-59). Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Sandstrom** with the system of Application/Control Number: 10/792,246

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Todokoro because it would provide a high yield production by compensating for any

errors in an etching process and thereafter re-etching to ensure process integrity as

taught by Todokoro (Col. 14, lines 46-59).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Any inquiry concerning communication or earlier communication from the

examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-

3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST

(every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo

Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit

2125 are (571) 273-8300. Any inquiry of a general nature or relating to the status of this

application should be directed to the group receptionist at (703) 305-9600.

Zoila Cabrera Primary Examiner 12/21/06

ZOILA CABRERA
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

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